

## Section 14

# ASSESSMENT OF GULF OF ALASKA THORNYHEADS EXECUTIVE SUMMARY

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### 14.1 Introduction

Gulf of Alaska (GOA) thornyheads has been moved to a biennial stock assessment schedule to coincide with new survey data. A full assessment was presented in 2005 which included data from the 2005 GOA bottom trawl and 2004 and 2005 longline surveys. On alternate (even) years we will present an executive summary with updated catch, last year's key assessment parameters, any significant new information available in the interim, and projections for this year.

While thornyhead rockfish are a commercially valuable species, there is no directed fishery because they are taken as incidental catch in other directed groundfish fisheries. Thornyheads are incidentally caught in directed fisheries for rockfish, flatfish and sablefish. Catch in recent years has been declining. The complex is dominated by shortspine thornyheads with longspine thornyheads making up a very minor component of the complex. Broadfin thornyheads (*Sebastolobus macrochir*) are rarely if ever encountered and it is recommended that these be removed from the assemblage.

Since 2003, thornyhead rockfish have been assessed using Tier 5 criteria given the lack of age data available to support age structured modeling. The average of the two most recent GOA trawl survey biomass estimates (2003 and 2005) was used to estimate exploitable biomass of 98,158 mt. Under Tier 5,  $F_{OFL} = M = 0.03$ , and maximum permissible  $F_{ABC} = 0.75 \times M = 0.0225$ . The 2006 (and 2007) ABC was determined by multiplying the exploitable biomass by  $\max F_{ABC} = 0.0225$  giving 2,209 mt. The corresponding OFL was 2,945 mt. The Council set 2006 OFL at 2,945 mt, and ABC equal to TAC for thornyheads at 2,209 mt. Last year's full assessment is available on the web (Gaichas et al. 2005, <http://www.afsc.noaa.gov/refm/docs/2005/GOAThornyheads.pdf>).

### 14.2 New information and projection

New catch information includes updated 2005 catch (719 mt), and 2006 catch (749 mt) as of November 4, 2006 ([http://www.fakr.noaa.gov/2006/car110\\_goa.pdf](http://www.fakr.noaa.gov/2006/car110_goa.pdf)). However, for projection purposes, catch equal to TAC (2,209 mt) is assumed.

There is no new information incorporated into the projection. For the 2007 fishery, we recommend an ABC of 2,209 mt. This ABC is equivalent to last year's ABC for 2006 (and 2007). The corresponding reference values for thornyheads are summarized below. Because Thornyheads are managed in Tier 5, several of the values are not applicable (NA).

Tier 5	Last year's projection		This year's projection	
	2006	2007	2007	2008
$M = 0.03$				
$B_{40\%}$ (mt)	NA	NA	NA	NA
Female Spawning Biomass (mt)	NA	NA	NA	NA
Maximum permissible $F_{ABC}$	0.0225	0.0225	<b>0.0225</b>	0.0225
$F_{ABC}$	0.0225	0.0225	<b>0.0225</b>	0.0225

$F_{OFL}$	0.03	0.03	<b>0.03</b>	0.03
ABC (mt yield at $F_{ABC} = 0.75M$ )	2,209	2,209	<b>2,209</b>	2,209
OFL (mt, yield at $F_{ABC} = M$ )	2,945	2,945	<b>2,945</b>	2,945

### 14.3 Area apportionment

The apportionment percentages are identical to last year, because there is no new survey information. The following table shows the recommended apportionment for 2007.

	Western	Central	Eastern	Total
Area Apportionment	23%	45%	32%	100%
Area ABC (mt)	<b>513</b>	<b>989</b>	<b>707</b>	<b>2,209</b>

### 14.4 Research priorities

Because fishing mortality appears to be a larger proportion of adult thornyhead mortality in the GOA than predation mortality, highest priority research should continue to focus on direct fishing effects on shortspine thornyhead populations. The most important component of this research is to fully evaluate the age and growth characteristics of GOA thornyheads to re-institute the age structured population dynamics model with adequate information. More information on thornyhead habitat preferences would be useful to improve our understanding of Essential Fish Habitat (EFH), and improve our assessment of the impacts to habitat due to fishing. Better habitat mapping of the Gulf of Alaska would provide information for survey stratification and the extent of trawlable and untrawlable habitat.

It is critically important to the assessment of thornyheads that the GOA trawl surveys extend into deeper waters (>500 m) in order to cover the range of primary habitat for the shortspine thornyhead stock.

### 14.5 Summaries for the Plan Team

Species	Year	Biomass	OFL	ABC	TAC	Catch
Thornyhead (Gulfwide)	2005	86,200	2,590	1,940	1,940	719
	2006	98,158	2,945	2,209	2,209	749 <sup>1</sup>
	2007	98,158	2,945	2,209		
	2008	98,158	2,945	2,209		

Stock/ Assemblage	Area	2006				2007		2008	
		OFL	ABC	TAC	Catch <sup>1</sup>	OFL	ABC	OFL	ABC
Thornyheads	W	--	513	513	195		513		513
	C	--	989	989	385		989		989
	WYAK	--	--	--	--		--		--
	SEO	--	--	--	--		--		--
	E	--	707	707	169		707		707
	Total		2,945	2,209	2,209	749 <sup>1</sup>	2,945	2,209	2,945

1/ Current as of November 4, 2006 ([http://www.fakr.noaa.gov/2006/car110\\_goa.pdf](http://www.fakr.noaa.gov/2006/car110_goa.pdf)).